CALCULUS.

320. Proposed by J. F. LAWRENCE, Stillwater, Oklahoma.

Show that, if $u=1+A_1x+\frac{1}{2!}A_2x^2+\frac{1}{3!}A_3x^3+\ldots$ where the quantities A are connected by the relation $A_m=mA_{m-1}-\frac{1}{2}(m-1)(m-2)A_{m-3}$, then $\log[u(1-x)^{\frac{1}{2}}]=\frac{1}{2}x+\frac{1}{4}x^2$. [From Forsyth's *Differential Equations*, p. 48.]

321. Proposed by ARTEMAS MARTIN, Ph. D., LL. D., United States Coast and Geodetic Survey Office, Washington, D. C.

To a person in a boat at the center of a circular pond the bottom appears to be perfectly level. What is the actual form of the bottom of the pond, the depth of the water at the center being a feet, and the distance of the eyes of the observer from the surface of the water being b feet. [From the *Mathematical Visitor*, Vol. 2, No. 2, p. 62.]

MECHANICS.

267. Proposed by PROFESSOR G. H. LIGHT, Purdue University, Lafayette, Indiana.

A parabolic curve is placed in a vertical plane with its axis vertical and vertex downwards, and inside it, and against a peg in the focus, and against the concave arc, a smooth uniform and heavy beam rests; required the position of equilibrium. [From Bowser's *Mechanics*, Ex. 37, p. 96.]

268. Proposed by W. J. GREENSTREET, M. A., Editor of The Mathematical Gazette, Stroud, England.

ABC and ADE are two uniform congruent wedges, each of weight w. $B=D=90°$. At B and D they are smoothly hinged to a horizontal table. The bases AB, AC all but meet at A, the common foot of two rough inclined faces AC, AE. A rod, weight W, length $2l$, reclines horizontally and symmetrically with an end on each inclined face. Find the conditions of equilibrium.

NOTES AND NEWS.

The winter meeting of the Chicago section of the American Mathematical Society was held in Chicago on Friday and Saturday, December 28, 29, 1911. There were fifty-seven in attendance upon the various sessions, including forty-three members of the Society. Seventeen papers were read in the three sessions and a most enjoyable time was spent at the dinner on Friday evening at the Quadrangle Club. S.

Professor J. McKeen Cattell, Columbia University, lectured, on January 22, before the Senate of the University of Illinois, on the subject of University Administration. Professor Cattell holds the view that administrative officers, including the President of the University, should not receive any larger salaries than the most competent professors are paid. He would also put the emphasis on good men rather than on fine buildings and grounds. M.

In a series of articles under the title "Twelve Major Prophets of Today," now appearing in *The Independent*, Henri Poincaré, the eminent French mathematician is the subject of the third paper. The author, Dr. Edwin E. Slosson, pays the following tribute to one of the *Monthly's* contributors: "In this country Poincaré has become known largely through the efforts of Professor George Bruce Halsted of the State Normal School of Greeley, Colorado, who has translated his philosiphical works and has for many years been indefatigable in spreading the new gospel of the non-euclidean geometry. S.

The sixty-third meeting of the American Association for the Advancement of Science was held at Washington, D. C., December 27 to December 30, and was attended by about 2500 members of the Association and affiliated societies. At this meeting Professor Moore gave his retiring address as chairman of Section A. His subject was, "On the foundation of the theory of linear integral equations. Professor VanVleck, University of Wisconsin, was elected chairman of Section A for the next meeting, which is to be held at Cleveland, Ohio, during the week in which January first, 1913, falls. M.

The United States Bureau of Education has recently issued Bulletins Numbers 13 and 16 for 1911, the former containing the Report of the American Committees I and II, on Mathematics in the Elementary Schools of the United States; and the latter containing the Report of the American Committees III and IV, on Mathematics in the Public and Private Secondary Schools. These Reports are prepared under the direction of the American Commissioners of the International Commission on the Teaching of Mathematics. They may be secured gratis by addressing the United States Commissioner of Education at Washington. S.

At the annual meeting of the Central Association of Science and Mathematics Teachers held at Lewis Institute in Chicago, there were presented at the Mathematics section two important reports of committees: (1) on Results of Mathematical Teaching, Ascertained by Scientific Spirit in the Daily Work and by Scientific Methods of Testing Efficiency; and (2) on Uniform Notation for Algebra. The first report was presented by Professor C. E. Comstock of Bradley Polytechnic Institute, Peoria, Illinois, and and was discussed by Mr. Charles Otterman, of Cincinnati, Ohio, and the second was presented by Mr. L. P. Jocelyn of Ann Arbor, Michigan, High School, and was discussed by Professor E. R. Hedrick, of the University of Missouri, and by Professor George R. Twin, of Ohio State University. An interesting paper also was presented by Mr. K. G. Smith, of the University of Wisconsin on, "The Applications of Mathematics to Problems of the Shop." The following officers were elected for the year 1912; Chairman, Ira S. Condit, State Teachers College, Cedar Falls, Iowa; Vice-Chairman, Charles W. Newhall, Shattuck School, Faribault, Minnesota; Secretary, Miss Marie Gugle, Central High School, Toledo, Ohio. S.